The Effect of International Monetary Fund and World Bank Programs on Poverty

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Abstract: Structural adjustment, as measured by the number of adjustment loans from the IMF and World Bank, reduces the growth elasticity of poverty reduction. I find no evidence for a direct effect of structural adjustment on growth. The poor benefit less from output expansion in countries with many adjustment loans than in countries with few adjustment loans. By the same token, the poor suffer less from an output contraction in countries with many adjustment loans than in countries with few adjustment loans. Why would this be? One hypothesis that adjustment lending is counter-cyclical in ways that smooth consumption for the poor. There is evidence that some policy variables under adjustment lending are counter-cyclical, but there is no evidence that the cyclical component of those policy variables affects poverty. I speculate that the poor may be ill-placed to take advantage of new opportunities created by structural adjustment reforms, just as they may suffer less from the loss of old opportunities in sectors that were artificially protected prior to reforms.

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Poverty reduction is in the news for both the IMF and the World Bank. The IMF web-site says

In September 1999, the objectives of the IMF's concessional lending were broadened to include an explicit focus on poverty reduction in the context of a growth oriented strategy. The IMF will support, along with the World Bank, strategies elaborated by the borrowing country in a Poverty Reduction Strategy Paper (PRSP). [2]

For its part, the World Bank headquarters has built into its lobby wall the slogan "our dream is a world free of poverty." The recent East Asian currency crisis and its aftershocks in other countries generated intense concern about how the poor were faring under structural adjustment programs supported by the Bank and the Fund. The poverty issue is so red-hot that IMF and World Bank staff began to feel that every action inside these organizations, from reviewing public expenditure to vacuuming the office carpet, should be justified by its effect on poverty reduction.

At the same time, there has been a long standing criticism from the left of Bank and Fund structural adjustment programs as disproportionately hurting the poor:

When the International Monetary Fund (IMF) and World Bank arrive in southern countries, corporate profits go up, but so do poverty and suffering. Decades of promises that just a little more "short-term" pain will bring long-term gain have exposed the IMF and World Bank as false prophets whose mission is to protect those who already control too much wealth and power.[3]

A report published today by the World Development Movement (WDM) shows that the International Monetary Fund's (IMF) new Poverty Reduction Strategies are acting as barriers to policies benefiting the world's poorest people.[4]

Many developing countries suffered ... sustained increases in prosperity, accompanied by dramatic increases in inequality and child poverty ... under the auspices of IMF and World Bank adjustment programmes.[5]

In country after country, structural adjustment programs (SAPs) have reversed the development successes of the 1960s and 1970s, with ... millions sliding into poverty every year. Even the World Bank has had to accept that SAPs have failed the poor, with a special burden falling on women and children. Yet together with the IMF it still demands that developing countries persist with SAPs.[6]

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[2] http://www.imf.org/external/np/exr/facts/prgf.htm
[3] http://www.oneworld.net/campaigns/imf&wb/index.html under "50 years is enough"
[4] http://www.oneworld.net/anydoc2.cgi?url=http://www.wdm.org.uk/presrel/current/PRSPcritique.htm
[5] http://www.oneworld.net/anydoc2.cgi?url=http://www.oxfam.org.uk
[6] http://www.oneworld.org/guides/sap/index.html

This paper examines the effect of IMF and World Bank adjustment lending on poverty reduction. I briefly examine the effect of IMF and World Bank adjustment lending on growth and find no effect (suitably instrumenting for adjustment lending), which is in line with the previous long and inconclusive literature. My main result is that IMF and World Bank adjustment lending lowers the growth elasticity of poverty, that is the amount of change in poverty rates for a given amount of growth. This means that economic expansions benefit the poor less under structural adjustment, but at the same time economic contractions hurt the poor less. What could be the mechanisms for such a result?

There could be several possible explanations. I first speculate that IMF and World Bank conditionality may be less austere when lending occurs during an economic contraction, while conditionality may require more macro adjustment during an expansion. If macro adjustment disproportionately hurts the poor -- say because fiscal adjustment, for example, is implemented through increasing regressive taxes like sales taxes or decreasing progressive spending like transfers -- then we get the result that IMF and World Bank adjustment lending lowers the growth elasticity of poverty. Adjustment lending could even include an explicit fiscal insurance mechanism such as an increase in subsidies that cushions the effect of contractions on the poor, but accompanied by a reduction in subsidies in times of expansion. We can test this hypothesis explicitly by evaluating the behavior of fiscal policy and macro policy variables during expansions and contractions, with or without adjustment lending.

A nearly opposite hypothesis is that IMF and World Bank conditionality may itself cause an expansion or contraction in aggregate output -- depending on the

composition of the structural adjustment package -- but not affect the poor very much. This view would see the poor as mainly deriving their income from informal sector and subsistence activities, which are not affected much by fiscal policy changes or adjustments in macro policies. Structural adjustment packages usually imply some previously favored formal sector activities must contract while other formal sector activities newly favored can expand. The net effect may be overall contraction or expansion, depending on the initial sizes of the declining and expanding sectors and the specific policy measures in the structural adjustment package. However, if the poor are not tightly linked to either the expanding or the contracting formal sector, then the amount of poverty change for a given amount of output change may not be very high under structural adjustment. An expansion or contraction in the absence of adjustment lending, on the other hand, may reflect economy-wide factors that lift or sink all boats. I will not be able to test this hypothesis directly because of lack of comparable data on the size of the informal sector and its incidence among the poor, but I offer it as a backup hypothesis in case the first hypothesis fails.

I. Data and concepts for paper

I have data for 1980-98 on all types of IMF lending and on World Bank adjustment lending. IMF lending includes stand-bys, extended arrangements, structural adjustment facilities, and enhanced structural adjustment facilities (recently renamed Poverty Reduction and Growth Facilities). The latter two kinds of operations are concessional for low-income countries. World Bank adjustment lending includes structural adjustment loans, sectoral structural adjustment loans, and structural adjustment credits (the latter is concessional for low-income countries). The data are

reported in the year that the loans are approved. Hence, my data take the form of number of new Bank and Fund adjustment loans approved each year. It would be preferable to have data that record also how long these loans are in effect, but the data are unfortunately not available in this format. For any time period I consider in this paper, I consider the average number of new Bank and Fund adjustment loans per year.

Conditionality associated with these loans is well-known: macroeconomic conditions like reducing budget deficits, devaluation, and reducing domestic credit expansion, and structural conditions like freeing controlled prices and interest rates, reducing trade barriers, and privatizing state enterprises. Although the Fund is associated more with the former and the Bank with the latter, in practice neither will proceed with an adjustment loan unless the other is satisfied with progress on "its" area of responsibility.

For data on poverty, I use an updated version of Ravallion and Chen's (1997) database on poverty spells. These authors were careful to choose spells and countries where the definition of poverty was constant and comparable over time and across countries. The source of the data is household surveys. They report the proportion of the population that is poor at the poverty line of $2 per day at the beginning of the spell and the end of the spell (they also report the poverty rates for a poverty line of $1 per day, but I choose to use the former because many countries have a 0 initial value at $1 per day). They also report the Gini coefficients at the beginning and the end, and the mean income in the household survey at the beginning and the end. They report data on 155 spells for 65 developing countries (the Appendix table gives the countries and numbers of spells each). The spells are quite short (median length 3 years), and so I interpret them more as

cyclical fluctuations in mean consumption and poverty rather than as long-run tendencies in growth and poverty reduction. Table 1 gives the descriptive statistics for all the data:

Table 1: Descriptive Statistics on Variables Used

	Change in poverty	Mean consumption Growth	Initial Gini	Initial poverty rate	Adjustment loans per year
Mean	6.0%	-1.1%	39.5	41.2	0.62
Median	-0.1%	0.0%	39.5	36.3	0.50
Std. Dev.	31.5%	11.1%	11.1	29.6	0.60
Observations	149	155	155	154	150

II. Results on Adjustment Lending and Poverty Reduction

Following Ravallion 1997, I regress the change in poverty rate on growth of mean income and the interaction of growth of mean income with the Gini coefficient. The idea of this specification is that if the poor have a low share in existing income (high Gini), they will likely have a low share in newly created income (low growth elasticity of poverty reduction). I also include the level of the initial Gini for completeness. To test the effect of IMF and World Bank adjustment lending, I include the variable measuring number of adjustment loans per year during the poverty spell and also interact this variable with growth.

There is the well known selection bias problem with World Bank and IMF lending. This lending goes to countries that are in trouble, and this trouble could include initial high poverty rates. We could even imagine that World Bank and IMF programs go to countries who are more likely to reduce poverty rapidly. With these concerns in mind, I instrument for World Bank and IMF lending. I follow the practice of the foreign aid literature in using dummies that measure friends of influential donors, including a dummy for Central America, one for Egypt, and one for Franc Zone countries. I also

include continent dummies as instruments for lending, because both the World Bank and IMF have a different department for each continent, and these different departments may have different propensities to make loans. I also include initial income as an instrument of adjustment loan frequency.

With the same set of instruments, I also tested the direct effect of adjustment lending on growth, not controlling for any other factors. In line with a long and inconclusive literature, I found no systematic effect of adjustment lending on growth. (A recent paper by Przeworski and Vreeland 2000 reviews the long inconclusive literature on the IMF, while they themselves find a negative effect controlling for selection bias. Some internal Bank and Fund studies have found positive effects of their programs on growth. I do not intend to make the effect of structural adjustment on growth a major focus of the paper, since structural adjustment would of course alleviate poverty if it raised growth and worsen it if it lowered growth.) Of course, behind this zero average result is concealed a set of expansions and contractions that depended in part on the particulars of the adjustment program in each country and time period. In general, we would expect that an adjustment program would disfavor some sectors that were previously artificially protected or subsidized, and favor other sectors that benefit from a change in relative prices in their favor. Whether expansion or decline dominates depends in part on the relative sizes of the expanding and declining sectors (as pointed out by Rauch 1997).

The result on expansions strongly reducing the rate of poverty -- or output crises raising the rate of poverty -- is familiar from other studies (Ravallion and Chen 1997, Dollar and Kraay 2000, Bruno et al. 2000, Lustig 2000, Ravallion 2000). Without

controlling for other variables, the mean growth elasticity of poverty is about 1.9 (Table 2).

The significant coefficient on the interaction term between the Gini coefficient and the growth rate also confirms the Ravallion 1997 and Bruno et al. 2000 result (Table 2). Ten percentage points higher Gini will lower the growth elasticity of poverty by 0.6 percentage points. A not-often-noticed implication of this result is that the poor will be hurt less by output contraction in a highly unequal economy than in a relatively equal one, simply because the poor have a low share of output to begin with. The initial Gini also has a direct negative effect on the change in poverty, suggesting a reversion to greater equality if a country begins highly unequal.

The new result in this paper is that, while adjustment lending has no direct effect on poverty reduction, it has a strong interaction effect with economic growth (Table 2).[7] The absolute value of the growth elasticity of poverty declines by about 2 points for every additional IMF or World Bank adjustment loan per year. The results are strong either in OLS or instrumenting for World Bank and IMF programs with the instruments shown.

This means that the poor benefit less from expansions during a structural adjustment program than in expansions without an adjustment program, while they are at the same time hurt less by contractions. Expansion under adjustment lending is less pro-poor, while contraction under adjustment lending is less anti-poor. The welfare of the poor may have increased from the income smoothing effect of adjustment lending.

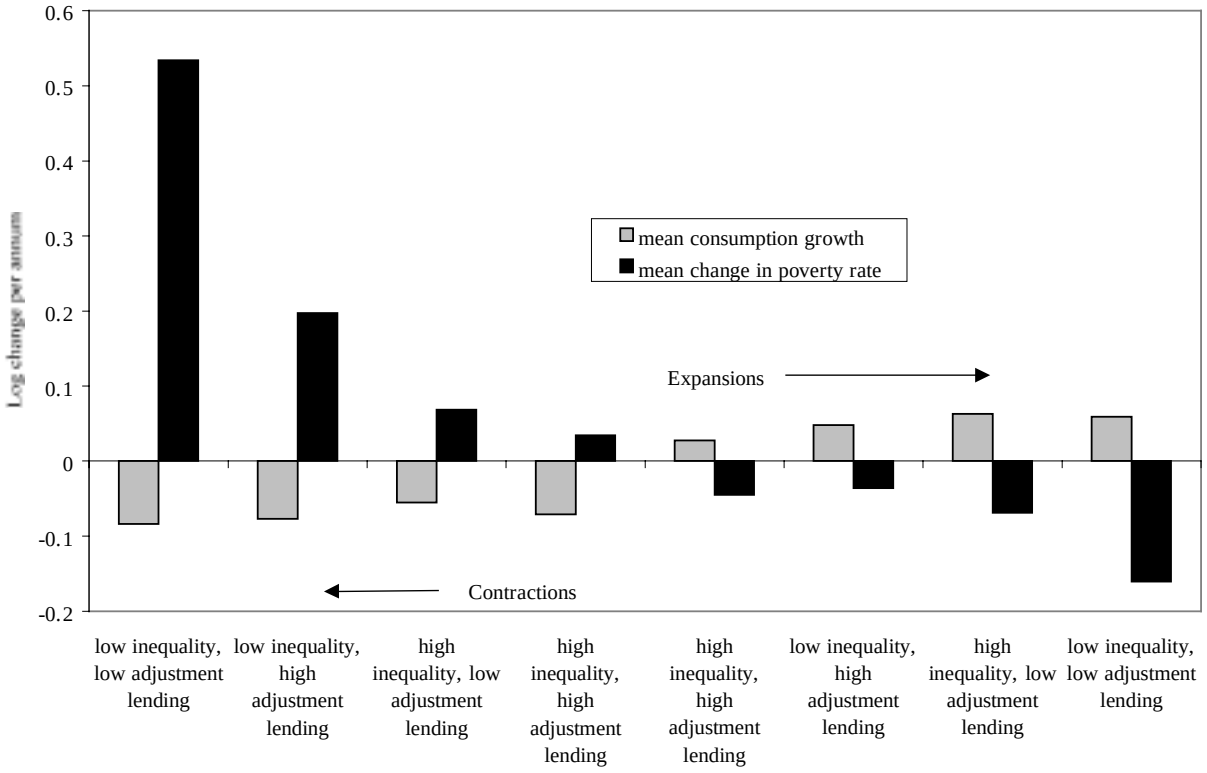
[7] IMF (1999) found that "In seven SAF/ESAF countries for which data are available, poverty rates declined by an average of 20 percent under IMF-supported adjustment programs, implying an average annual reduction of 5.3 percent" This study did not control for mean growth.

On the other hand, it is disappointing that the poor do not share fully in growth in those cases where there are recoveries that accompany adjustment lending. Since the Bank and the Fund ultimately wish to restore growth in the economies to which they make adjustment loans, it is worrisome that positive growth has less of a poverty-reducing impact with high Bank-Fund involvement.

Table 2: Regression results on change in poverty, growth, and adjustment programs						
Dependent Variable: Log rate of change per annum in percent of population below $2/day						
Method:	Ordinary Least Squares		Ordinary Least Squares		Two-stage Least Squares	
	Regression 1		Regression 2		Regression 3	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.039	1.82	0.319	4.68	0.382	4.21
GROWTH	-1.892	-8.24	-5.481	-8.27	-5.465	-4.61
GINI1			-0.006	-3.83	-0.006	-3.65
PROGRAM			-0.019	-0.62	-0.116	-1.30
GROWTH*GINI1			0.058	3.27	0.057	2.68
GROWTH*PROGRAM			1.790	7.37	2.034	3.44
Included observations:	149		144		126	
Instruments for PROGRAM: CENTAM EASIA EGYPT FRZ SSA LAC ECA GROWTH*CENTAM GROWTH*EASIA GROWTH*FRZ GROWTH*EGYPT GROWTH*SSA GROWTH*GINI1 GROWTH*LAC GROWTH*ECA LGDPPC						
Variable definitions						
GROWTH	Log rate of growth per annum in mean of household survey					
GINI1	Initial Gini coefficient					
PROGRAM	Number of IMF/World Bank adjustment loans initiated per annum					
CENTAM	Dummy for Central America					
FRZ	Dummy for Franc Zone					
EGYPT	Dummy for Egypt and Israel					
SSA	Dummy for Sub-saharan Africa					
LAC	Dummy for Latin America					
ECA	Dummy for Eastern Europe and Central Asia					
EASIA	Dummy for East Asia					
LGDPPC	Log of initial per capita income (Summers-Heston)					

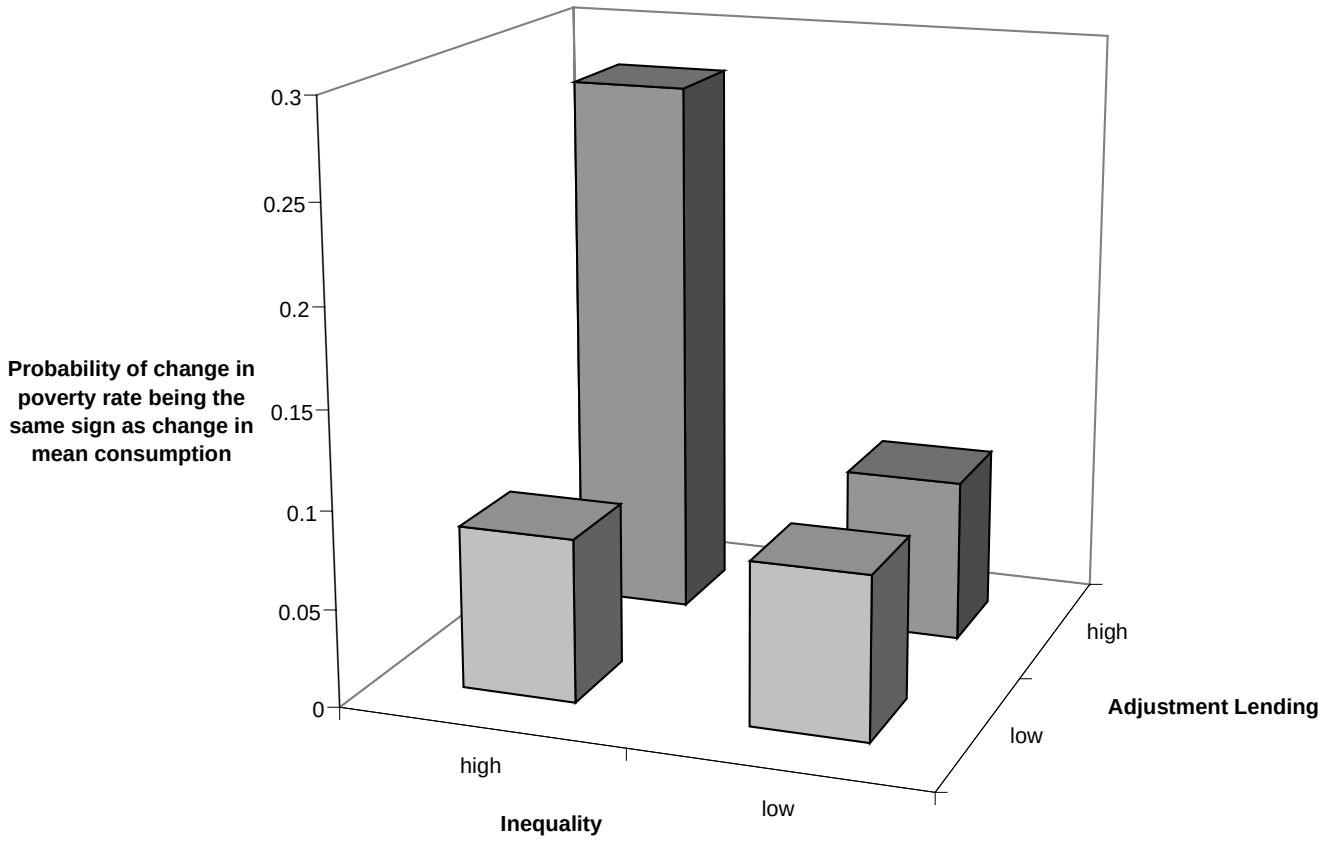
Figure 1 illustrates the results. Countries with a low level of adjustment lending (AL) as measured by PROGRAM and low inequality have both greater increases in poverty during contraction and greater falls in poverty during expansions than do countries with a high level of IMF and World Bank lending and high inequality. (High and low AL here just mean the upper and lower 50% of the sample as measured by program; expansion is the average of all increases in mean income while contraction is the average of all decreases in mean income).

Figure 1: Contractions and Expansions, with Varying Levels of Inequality and Adjustment Lending



Another way of illustrating the weakened link between growth and poverty reduction with high inequality and high adjustment lending is to calculate the number of perverse outcomes in quartiles of the sample defined by high and low inequality and high and low adjustment lending. A perverse outcome is defined as either a mean expansion with an increase in poverty, or a mean contraction with a decrease in poverty. Such perverse outcomes are rare except in the case when both inequality and adjustment lending are high, when they account for 27 percent of the sample (Figure 2).

Figure 2: Probability of perverse poverty-growth outcomes depending on level of inequality and adjustment lending



What is the marginal impact on poverty of IMF and World Bank adjustment loans? If we specify a counterfactual of zero adjustment lending to all countries in the

sample, we find that the effect of the actual adjustment loans on the number of poor was a net increase of 14 million. This represents an increase of 0.4 percentage points in the population-weighted average poverty rate in the sample. The outcome reflects the net effect of an increase in the number of poor compared to the counterfactual of no adjustment loans in growing countries like India and China, while there was a decrease in poverty compared to the counterfactual in contracting countries like Russia and Ukraine. The unweighted median change in the poverty rate associated with adjustment loans is 0.0.

Table 3 uses the coefficients from regression (2) to calculate the poverty elasticity with respect to growth at different levels of the Gini coefficient and adjustment loans per year (AL). The middle cell is close to using the average value for Gini and AL, and we reproduce the familiar elasticity of 2. However, there is great fluctuation around this average for different measures of the Gini and AL. If there are no adjustment loans and inequality is very low, then poverty is extremely elastic with respect to growth (3.8). China in 1990-92 is an example of an observation that would approximately fall in this cell. At the other extreme a highly unequal country receiving adjustment loans sees no effect of growth or contraction on poverty. Colombia in 1995-96 is an example of a country that would roughly fit in this cell.

Table 3: Poverty elasticities with respect to growth for different Gini coefficients and adjustment loan intensity

	Average number of adjustment loans per year during survey spell		
GINI coefficient	0	0.5	1
30	-3.8	-2.7	-1.7
45	-2.9	-1.9	-0.9
60	-2.1	-1.0	0.0

I performed several robustness checks on these results. First, I looked for asymmetries between expansion and contraction in both growth effects and the interaction term with adjustment lending. I found no evidence for any asymmetries -- the interaction term between adjustment lending and growth remains statistically significant in the separate samples of expansions and contractions.

Second, I added the initial poverty rate both in levels and as an interaction term. The initial poverty rate enters with a negative sign in levels -- indicating some tendency of poverty to revert to the mean -- but it leaves the significance of the interaction term between adjustment lending and growth unchanged.

Third, I entered the mean household consumption from the household survey, both in levels and as an interaction term with growth. It left the coefficient on the growth and adjustment program interaction unchanged in magnitude and significance, while the mean household consumption was not significant either in levels or as an interaction term with growth.

Given all the interest in currency crises, I examine the 4 currency crisis cases that are in the present sample: Mexico (89-95), Indonesia (1996-99), Russia (1996-98), and Thailand (1996-98). All of them had at least one adjustment loan per year during the period before and during the crisis (Table 4). Growth was negative in all cases, but the increases in poverty were fairly modest except for Indonesia. We should not make much out of 4 datapoints in a sample of 126 observations, but it's still interesting to see if we can explain the differential poverty response to currency-output crises with the regression. We can understand Mexico's low poverty-growth elasticity as reflecting its high inequality and its receipt of adjustment loans. Thailand's near zero poverty-growth

elasticity could be rationalized as a consequence of its high adjustment intensity and its relatively average rate of inequality. Indonesia fits the story with a slightly below average elasticity associated with low inequality but relatively intense adjustment lending. Russia is an outlier, with a high elasticity despite an extraordinarily high number of adjustment loans per year.

Table 4: Growth, poverty, and adjustment lending in currency crises

Country	Spell	mean growth	rate of change of poverty	poverty wrt growth elasticity	Percent of population below $2/day, beginning	Percent of population below $2/day, end	Gini coefficient, beginning	Average number of adjustment loans per year
Indonesia	96-99	-4.3%	7.5%	-1.73	50.51	63.21	36.45	1.0
Mexico	89-95	-1.9%	1.5%	-0.81	38.80	42.47	55.14	1.0
Russia	96-98	-0.6%	1.3%	-2.16	24.43	25.08	48.03	2.5
Thailand	96-98	-1.8%	-0.2%	0.10	28.25	28.15	43.39	1.5

III. Testing the counter-cyclicality of adjustment lending

One possible explanation for the poverty-smoothing effect of adjustment lending may be that conditionality on macro adjustment is tougher during expansions than contractions, since the Fund and Bank may fear deepening a contraction with excessive austerity. If the poor disproportionately suffer from austerity, then in contractions they will suffer less for a given rate of mean income decline while conversely they will do less well for a given rate of growth in expansions. Second, the principal means of fiscal adjustment under adjustment programs during expansions may be through regressive taxation like sales taxes, which lower the benefits to the poor of mean income growth. Third, Bank and Fund lending programs may explicitly include "social safety nets" that cushion the effect of a contraction on the poor, while these transfers may be reduced

during expansions. I will first test for counter-cyclicality of these variables, and then test their effect on the poverty rate.

Table 5 test the counter-cyclicality of adjustment lending by presenting means of macro and fiscal policy variables for quartiles of the sample divided between expansions and contractions and between high and low adjustment lending. We find some evidence for counter-cyclicality of adjustment lending. Inflation is above average during contractions under high adjustment lending, suggesting conditions on monetary growth and domestic credit expansion may be less tough if the economy is otherwise experiencing a contraction. (There could also be reverse causation from above average inflation to economic contraction, but then why does this not show up under low adjustment lending?) Most interesting of all, transfers are significantly above average during contractions under adjustment lending, while they are significantly below average during high-AL expansions; there is no such counter-cyclical behavior of transfers under low adjustment lending. Other macro and fiscal policy variables do not show significant deviations from the means in the quartile subsamples.

Table 5: Deviations of policy variables from long-run averages under expansions and contractions with different levels of adjustment lending *(t-statistics in italics)*				
variable	expansion and high adjustment lending	expansion and low adjustment lending	contraction and high adjustment lending	contraction and low adjustment lending
Macro policies (log deviations)				
Black market premium	-6.7%	-7.3%	-6.2%	5.4%
	-1.61	*-2.45*	*-1.09*	*0.94*
Inflation	-0.7%	0.4%	6.9%	6.3%
	-0.72	*0.21*	*2.63*	*0.61*
Real exchange rate (negative is depreciation)	-13.7%	-4.1%	-14.5%	-0.3%
	-4.90	*-1.36*	*-3.68*	*-0.06*
Real interest rate	0.0%	2.9%	2.5%	-3.1%
	0.02	*0.94*	*0.64*	*-0.46*
Fiscal policies (% of GDP)				
Budget surplus	0.28	0.67	0.63	0.18
	0.39	*2.10*	*1.40*	*0.26*
Transfers	-0.57	0.00	0.86	-0.18
	-1.94	*0.01*	*2.44*	*-0.45*
Taxes on domestic goods and services	-0.12	0.32	-0.48	0.31
	-0.63	*1.84*	*-1.53*	*1.21*

Table 6 does various tests of the equality of means across the quartiles displayed in Table 5. Under high adjustment lending, I confirm that inflation and transfers are significantly higher under contractions than under expansions, again reinforcing the possibility of countercylicality of monetary and fiscal policy under adjustment lending.

There are something other interesting differences in means. The black market premium moves counter-cyclically under low adjustment lending -- low during expansions and high during contractions. Causation here could run in both directions, but what is important for the poor is the pattern of cyclical covariation. Adjustment lending eliminates this countercylicality, which would tend to smooth consumption of the poor if they suffer disproportionately from high black market premiums.

The other strong pattern that emerges is that adjustment lending is associated with a more depreciated real exchange rate, regardless of whether mean consumption is expanding or contracting. This is no doubt because devaluation is often a condition of IMF programs. There may also be reverse causation from currency collapses to the initiation of World Bank and IMF adjustment loans. Devaluation itself may be expansionary or contractionary (Gupta, Mishra, and Sahay 2000), perhaps depending on the size of the initial current account imbalance and the currency denomination of public and private debt relative to the tradeables intensity of those who owe the debts.

Table 6: Testing for countercyclical effects of IMF/World Bank adjustment lending (AL)								
(t-statistics in italics below coefficient)	*high AL different than low AL during expansions*		*high AL different than low AL during contractions*		*expansions different than contractions during high AL*		*expansions different than contractions during low AL*	
variable	Coefficient on high AL dummy	Obser-vations	Coefficient on high AL dummy	Obser-vations	Coefficient on expansion dummy	Obser-vations	Coefficient on expansion dummy	Obser-vations
Macro policies (log differences)								
Black market premium	0.01	58	-0.12	49	0.00	60	-0.13	47
	0.11		*-1.36*		*-0.06*		*-2.13*	
Inflation	-0.01	67	0.01	54	-0.08	62	-0.06	59
	-0.49		*0.06*		*-2.79*		*-0.67*	
Real exchange rate (negative means depreciation)	-0.10	57	-0.14	47	0.01	56	-0.04	48
	-2.31		*-2.31*		*0.17*		*-0.70*	
Real interest rate	-0.03	69	0.06	59	-0.02	64	0.06	64
	-0.75		*0.75*		*-0.56*		*0.89*	
Fiscal policies (percent of GDP)								
Budget surplus	-0.40	43	0.44	43	-0.35	41	0.49	45
	-0.55		*0.53*		*-0.43*		*0.64*	
transfers	-0.57	42	1.05	42	-1.43	39	0.19	45
	-1.46		*1.94*		*-3.05*		*0.39*	
Taxes on domestic goods or services	-0.44	43	-0.79	42	0.36	40	0.01	45
	-1.69		*-1.95*		*0.95*		*0.04*	

So there is some evidence that adjustment lending has counter-cyclical effects in ways that may smooth the consumption of the poor. But is there direct evidence that these effects account for the lower growth elasticity of poverty under adjustment lending? Unfortunately, it is difficult to find evidence that these policy variables are responsible for smoothing poverty under adjustment lending. The three examples of variables for which adjustment lending altered the cycle -- inflation, the black market premium, and fiscal transfers -- do not show any direct effect on poverty, either directly or interacted

with growth (Table 7). Entering these variables leaves the interaction effect of growth and adjustment lending on poverty unchanged.

Easterly and Fischer 2000 find some evidence that inflation increases poverty, when inflation is measured in absolute terms rather than relative to country averages. They also find that the poor are more likely than the rich to mention inflation as a top national problem in opinion surveys. Because of the difference in methodology, I don't think the results of Table 7 contradict the Easterly-Fischer results on the effects of inflation on poverty. I interpret the inflation deviation as a measure of the cyclical component of inflation which may be altered by IMF and World Bank adjustment lending. This cyclical component of inflation doesn't seem to have an effect on the log change in the poverty rate, in contrast to the negative effect of very high absolute inflation on the poor.

Table 7: Regression of poverty rate on possible mechanisms for poverty smoothing through adjustment lending						
Dependent Variable: Log change in poverty rate						
Method: Two-Stage Least Squares						
	Regression 1		Regression 2		Regression 3	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.010	1.00	0.006	0.64	0.020	1.46
GROWTH	-5.086	-6.36	-4.252	-5.72	-7.654	-5.57
GINI1*GROWTH	0.076	4.35	0.055	3.20	0.127	4.21
GROWTH*PROGRAM	0.713	2.13	0.752	2.13	1.180	2.57
GROWTH*PIDEV	-0.930	-1.17				
PIDEV	-0.028	-0.62				
GROWTH*BMPDEV			-1.200	-1.50		
BMPDEV			-0.049	-1.07		
GROWTH*TRANSFERS					-0.088	-0.57
TRANSFERS					-0.004	-0.35
Observations	99		91		65	
Instrument list: C GROWTH GINI1 CENTAM EASIA EGYPT SSA						
GROWTH*CENTAM GROWTH*EASIA GROWTH*EGYPT						
GROWTH*SSA GROWTH*LAC GROWTH*FRZ GROWTH*ECA						
LGDPPC LAC ECA FRZ LPOP GROWTH*LPOP GROWTH*Ancillary Variable						
Ancillary Variable						
New variables:						
PIDEV	Deviation of log inflation from average 1980-98					
BMPDEV	Deviation of log black market premium from average 1980-98					
TRANSFERS	Deviation of transfers/GDP from average 1980-98					

The message of Table 7 is consistent with the alternative hypothesis mentioned at the beginning of the paper. The kind of macroeconomic and fiscal policy measures that the Bank and Fund usually support may themselves cause an expansion or contraction in the aggregate economy, depending on the composition of adjustment packages. But these policies may not affect the poor very much because the poor derive much of their income from the informal sector or subsistence production. The beneficiaries of government transfers also may simply be the middle class rather than the poor. I don't test this

hypothesis directly, but I adduce a few illustrative bits of information. Table 8 shows the share of the informal sector in urban employment in a variety of developing countries. While there are many problems with the comparability and accuracy of such statistics, the message of Table 8 seems to consistently be that the urban informal sector is large. It seems likely that the rural informal sector would be even larger.

Table 8: Estimates of size of urban informal sector as percent of urban employment in developing countries

Country	*Year*	*Percent*
Argentina	1995	46
Benin	1992	48
Bolivia	1995	58
Botswana	1996	19
Brazil	1995	48
Cameroon	1993	57
Chile	1995	45
Colombia	1995	52
Costa Rica	1995	40
Côte d'Ivoire	1996	53
Croatia	1997	6
Ecuador	1995	48
Ethiopia	1996	33
Fiji	1990	43
Gambia	1993	83
Ghana	1997	79
Guatemala	1989	54
Honduras	1995	49
Jamaica	1996	24
Kenya	1995	58
Kyrgyzstan	1994	12
Latvia	1996	9
Madagascar	1995	58
Mali	1996	71
Mauritius	1992	24
Mexico	1995	54
Morocco	1988	28
Myanmar	1996	54
Pakistan	1992	67
Panama	1995	34

Table 8: Estimates of size of urban informal sector as percent of urban employment in developing countries (continued)		
Paraguay	1995	55
Peru	1995	49
Philippines	1988	26
Poland	1995	13
Slovakia	1996	19
South Africa	1995	17
Tanzania	1990	62
Thailand	1994	77
Tunisia	1981	39
Turkey	1993	15
Uganda	1993	84
Ukraine	1997	5
Uruguay	1995	32
Venezuela	1997	42
Zambia	1993	81
median		*48*
Source: ILO Key Indicators of the Labor Market		

The last piece in the puzzle is showing that the poor derive much of their income from informal and subsistence income. I offer a suggestive example from Zambia and Burkina Faso in Table 9. Self-employment income is extremely important for the poorest deciles in Zambia. The bias is less extreme in Burkina Faso, but the poorest still have their earnings skewed towards self-employment income. These surveys are suggestive of the importance of the informal sector for the poorest households, lending credence to the relative insulation of the poor from structural adjustment measures.

Lipton and Ravallion 1995 (p. 2601) stress that there is considerable heterogeneity within the urban informal sector, with an individual's poverty depending more on individual attributes like human capital than on any economy-wide labor market distortion leading to the creation of an informal sector. Other distortions may exclude the poor from taking advantage of reforms under structural adjustment, like lack of access to

credit. Van de Walle 2000 shows evidence of lower return to formal sector investments (irrigation in her specific example) for the less educated. The poor may be geographically isolated from the formal sector economy, which may be exacerbated by poor infrastructure. Whatever the distortion or initial endowment at work, the individuals who are poor may be ill-placed to take advantage of new opportunities created by structural adjustment programs, just as they may suffer less from the destruction of old opportunities enjoyed by protected sectors prior to structural adjustment.

Table 9: Sources of income -- percent share by income decile, from poorest to richest

	Zambia Household Survey		Burkina Faso HH Survey	
Income Deciles	Profits and self-employment income	Wages	Profits and self-employment income	Wages
1	100%	0%	42%	58%
2	99%	1%	32%	68%
3	94%	6%	21%	79%
4	67%	33%	19%	81%
5	45%	55%	17%	83%
6	17%	83%	15%	85%
7	12%	88%	18%	82%
8	11%	89%	21%	79%
9	10%	90%	27%	74%
10	36%	64%	46%	54%

Source: Devarajan et al. 2000, Fofack 2000

IV. Conclusions

The results in this paper are suggestive that IMF and World Bank adjustment lending provides a smoothing of consumption for the poor, lowering the rise in poverty for a given contraction, but also lowering the fall in poverty for a given expansion. Adjustment lending seems to play a similar role to inequality, in lowering the sensitivity of poverty to the aggregate growth rate of the economy.

The lower sensitivity of poverty to growth under adjustment lending is bad news during expansions and good news during contractions. If we think of the normal steady state of the economy as being one of positive growth, then adjustment lending is bad news for the growing economy; it means the poor share less in the expansion of the economy. One might think that adjustment lending happens only during non-steady-state output crises, but adjustment lending has been so continuous for some economies, it is hard to speak of it as purely a transitional phenomenon.

From a political economy point of view, lowering the sensitivity of poverty to the aggregate growth rate could be dangerous because it gives the poor less of a stake in overall good economic performance. This might increase the support of the poor for populist experiments at redistributing income.

These results could be interpreted to give support to either the critics or the supporters of structural adjustment programs. To support the critics, growth under structural programs is less pro-poor than in economies not under structural adjustment programs. To back the supporters, contractions under structural adjustment hurt the poor less than contractions not under structural adjustment programs.

The question not fully resolved by this paper is: why does structural adjustment reduce the sensitivity of poverty to growth? Although there is evidence that adjustment lending alters the cycle for some policy variables, there is no evidence that these alterations affect poverty. I speculate that the poor may be ill-placed to take advantage of new opportunities created by structural adjustment reforms, just as they may suffer less from the loss of old opportunities in sectors that were artificially protected prior to reforms.

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Appendix: Countries with poverty spells 1980-99 from Ravallion and Chen 1997 (updated by the authors)

Country	# spells
Algeria	1
Bangladesh	4
Belarus	3
Brazil	5
Bulgaria	3
Chile	3
China	8
Colombia	3
Costa Rica	3
Cote D'Ivoire	5
Czech Republic	1
Dominican Republic	1
Ecuador	2
Egypt	1
El Salvador	2
Estonia	2
Ethiopia	1
Ghana	2
Guatemala	1
Honduras	4
Hungary	1
India	10
Indonesia	5
Jamaica	4
Jordan	2
Kazakhstan	2
Kenya	1
Korea	1
Kyrgyz Republic	2
Latvia	3
Lesotho	1
Lithuania	3
Madagascar	1
Malaysia	4
Mali	1
Mauritania	2
Mexico	2
Moldova	1
Morocco	1
Nepal	1
Niger	1
Nigeria	2
Pakistan	3
Panama	4
Paraguay	1

Country	# spells
Peru	2
Philippines	4
Poland	4
Romania	2
Russia	3
Senegal	1
Slovakia	1
Slovenia	1
Sri Lanka	2
Thailand	4
Trinidad and Tobago	1
Tunisia	1
Turkey	1
Turkmenistan	1
Uganda	1
Ukraine	3
Uzbekistan	1
Venezuela	5
Yemen	1
Zambia	2
Grand Total	155